AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A dual band transceiver architecture for wireless communication comprising:

a first transmitting/receiving antenna for receiving and emitting a first band signal ~~of 2.4 GHz~~, and connected to a first band-pass filter and a first switch, and connected to a first power ~~amplifying device~~ amplifier and a first balance/imbalance device by switching the switch;

a second transmitting/receiving antenna for receiving and emitting a second band signal ~~of 5 GHz~~, and connected to a second band-pass filter and a second switch, and connected to a second power ~~amplifying device~~ amplifier and a second balance/imbalance device by switching the switch;

a high frequency integrated circuit ~~connected to the power amplifying device via the two balance/imbalance devices for receiving the signal transmitted from the first transmitting/ receiving antenna and the second transmitting/receiving antenna;~~ comprising:

a signal receiving portion, coupling with the first and second switches via the first and second balance/imbalance devices, respectively, down-converting the signal received by the first transmitting/receiving antenna to a first middle frequency and then to a first base frequency, and down-converting the signal received by the second transmitting/receiving antenna to a second middle frequency and then to a second base frequency;

a signal emission portion, coupling to the first and second switches via the first and second power amplifiers, respectively, and up-converting signals which will be emitted by the first or second transmitting/receiving antennas; and

~~wherein~~ a single frequency synthesizer ~~will accomplish the modulation and transmission for the signal by applying the mentioned units~~, providing band-mixing signals for the down-conversion of the signal receiving portion and the up-conversion of the signal emission portion, wherein the first middle frequency approximates the second middle frequency.

Claim 2. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim 1, ~~wherein the high frequency integrated circuit comprises a signal receiving portion and a signal emission portion~~ wherein the carrier frequency of the first band signal is about 2.4GHz and the carrier frequency of the second band signal is about 5GHz.

Claim 3. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim ~~2~~ 1, wherein the signal reception portion comprises:

~~a~~ the receiving frequency selection unit for receiving the signals outputted by the first or second balance/imbalance device and connected to a first high frequency wave-mixing device;

~~a~~ the first high frequency wave-mixing device for receiving the signals outputted by the receiving frequency selection unit and a first high frequency local oscillator and outputting the signals to a first middle frequency amplifying device;

~~a~~ the first middle frequency amplifying device for receiving the signal transmitted by the first high frequency wave-mixing device, amplifying the signal and outputting the amplified signal to a first middle frequency wave-mixing unit;

~~a~~ the first middle frequency wave-mixing unit for receiving the signal outputted by the first middle frequency amplifying device, performing wave-mixing after receiving a signal

outputted by an orthogonal distributor, and outputting the signal to a first orthogonal filtering amplifying unit and a second orthogonal filtering amplifying unit;

wherein the down conversion for the signal is accomplished by modulating the signals with different bands.

Claim 4. (Original) The dual band transceiver architecture for wireless communication according to the claim 3, wherein the receiving frequency selection unit further comprises a first low noise amplifier and a second low noise amplifier.

Claim 5. (Original) The dual band transceiver architecture for wireless communication according to the claim 3, wherein the first high frequency wave-mixing device further receives the signal outputted by a first high frequency local oscillator.

Claim 6. (Original) The dual band transceiver architecture for wireless communication according to the claim 3, wherein the first middle frequency wave-mixing unit further comprises a first middle frequency wave-mixing device and a second middle frequency wave-mixing device.

Claim 7. (Original) The dual band transceiver architecture for wireless communication according to the claim 3, wherein the first orthogonal filtering amplifying unit further comprises a first low-pass filter and a first programming gain amplifier.

Claim 8. (Original) The dual band transceiver architecture for wireless communication according to the claim 3, wherein the second orthogonal filtering amplifying unit further comprises a second low-pass filter and a second programmable gain amplifier.

Claim 9. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim ~~2~~ 1, wherein before the signal emission portion in the high frequency integrated circuit performs the up-conversion, a digital signal processor is used for processing signal ~~modulation~~, and then the ~~modulated~~ processed signal is separately outputted to a first digital-to-analog converter and a second digital-to-analog converter for converting the digital signal into an analog signal, and then the converted signal is separately outputted to the third orthogonal filtering amplifying unit and the fourth orthogonal filtering amplifying unit.

Claim 10. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim 9, wherein the signal emission portion comprises:

~~a~~ the third orthogonal filtering amplifying unit and

~~a~~ the fourth orthogonal filtering amplifying unit for separately performing the filtering and amplifying for the signal so as to separately output the signal to an emitting frequency selection unit;

~~a~~ the emission frequency selection unit for receiving the signals outputted by the two different orthogonal filtering amplifying units and then performing the selection for the signal band and processing the middle frequency wave-mixing so as to output two signals with different bands to a first high frequency wave-mixing unit and a second high frequency wave-mixing unit;

~~a~~ the first high frequency wave-mixing unit and ~~a~~ the second high frequency wave-mixing unit for receiving the signal outputted by the emitting frequency selection unit and then processing the high frequency wave-mixing for the signal so as to separately output the signal to a first front end amplifier and a second front end amplifier;

~~a~~ the first front end amplifier and ~~a~~ the second front end amplifier for separately receiving the signals outputted by the first high frequency wave-mixing unit and the second high frequency wave-mixing unit and then performing the front end amplifying for the signal so as to separately output the signal to the power amplifying device;

wherein the up-conversion for the signal is accomplished by modulating the signals with different bands.

Claim 11. (Original) The dual band transceiver architecture for wireless communication according to the claim 10, wherein the third orthogonal filtering amplifying unit comprises a third low-pass filter and a third programmable gain amplifier.

Claim 12. (Original) The dual band transceiver architecture for wireless communication according to the claim 10, wherein the fourth orthogonal filtering amplifying unit comprises a fourth low-pass filter and a fourth programmable gain amplifier.

Claim 13. (Original) The dual band transceiver architecture for wireless communication according to the claim 10, wherein the emitting selection unit comprises a second middle frequency wave-mixing unit and a third middle frequency wave-mixing unit.

Claim 14. (Original) The dual band transceiver architecture for wireless communication according to the claim 13, wherein the second middle frequency wave-mixing unit comprises a third middle frequency wave-mixing device, a fourth middle frequency wave-mixing device and a first wave-mixing device.

Claim 15. (Original) The dual band transceiver architecture for wireless communication according to the claim 14, wherein the third middle frequency wave-mixing device receives the signals outputted by the orthogonal distributor and the third orthogonal filtering amplifying unit, and the fourth middle frequency wave-mixing device receives the signals outputted by the orthogonal distributor and the fourth orthogonal filtering amplifying unit.

Claim 16. (Original) The dual band transceiver architecture for wireless communication according to the claim 13, wherein the third middle frequency wave-mixing unit comprises a fifth middle frequency wave-mixing device, a sixth middle frequency wave-mixing device and a second wave-mixing device.

Claim 17. (Original) The dual band transceiver architecture for wireless communication according to the claim 16, wherein the fifth middle frequency wave-mixing device receives the signals outputted by the orthogonal distributor and the third orthogonal filtering amplifying unit, and the sixth middle frequency wave-mixing device receives the signals outputted by the orthogonal distributor and the fourth orthogonal filtering amplifying unit.

Claim 18. (Original) The dual band transceiver architecture for wireless communication according to the claim 10, wherein after a second high frequency wave-mixing device and a third high wave-mixing device perform the wave-mixing for the high frequency signal, the first high frequency wave-mixing unit will output the signal to a third wave-mixing device.

Claim 19. (Original) The dual band transceiver architecture for wireless communication according to the claim 18, wherein the second high frequency wave-mixing device receives the signal outputted by the first high frequency local oscillator, and receives the signal outputted by the second middle frequency wave-mixing unit via the controlling of a first switch device.

Claim 20. (Original) The dual band transceiver architecture for wireless communication according to the claim 18, wherein the third high frequency wave-mixing device receives the signal outputted by the first high frequency local oscillator, and receives the signal outputted by the third middle frequency wave-mixing unit via the controlling of a second switch device.

Claim 21. (Original) The dual band transceiver architecture for wireless communication according to the claim 10, wherein after a fourth high frequency wave-mixing device and a fifth high frequency wave-mixing device perform the wave-mixing for the high frequency signal, the second high frequency wave-mixing unit will output the signal to a fourth wave-mixing device.

Claim 22. (Original) The dual band transceiver architecture for wireless communication according to the claim 21, wherein the fourth high wave-mixing device receives the signal outputted by the first high frequency local oscillator, and receives the signal outputted by the second middle frequency wave-mixing unit via the controlling of a third switch device.

Claim 23. (Original) The dual band transceiver architecture for wireless communication according to the claim 21, wherein the fifth high frequency wave-mixing device receives the signal outputted by the first high frequency local oscillator, and receives the signal outputted by the third middle frequency wave-mixing unit via the controlling of a fourth switch device.

Claim 24. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim ~~2~~ 1, wherein after a first local oscillator receives the signal outputted by a first phase lock device, it will oscillate the signal and output the signal to the first high frequency local oscillator and the orthogonal distributor.

Claim 25. (Currently Amended) The dual band transceiver architecture for wireless communication according to the claim ~~2~~ 1, wherein the signal reception portion performs the down conversion according to reference band-mixing signals which are 1.5 frequency multiplying and 0.5 frequency multiplying down-converted signals separately outputted by the first local oscillator.

Claim 26. (Original) The dual band transceiver architecture for wireless communication according to the claim 25, wherein the 1.5 frequency multiplying down-converted signal outputted by the first local oscillator is inputted into the first high frequency wave-mixing device for band-mixing.

Claim 27. (Original) The dual band transceiver architecture for wireless communication according to the claim 25, wherein the 0.5 frequency multiplying down-converted signal outputted by the first local oscillator is inputted into the first middle frequency wave-mixing unit for band-mixing.